Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Please cancel claims 1-13.

14. (new) A method of treating an effluent containing at least one of hydrofluoric acid and fluoride to thereby recover calcium fluoride, the method comprising:

forming a crystallization solution by combining the effluent with an aqueous solution of calcium chloride, and adjusting or maintaining the pH of the crystallization solution such that solubility of calcium fluoride is at least 0.05%;

allowing calcium chloride crystals to form in the crystallization solution, wherein the calcium chloride crystals have a purity of at least 98% and an average particle size of between 5-300 μm;

separating the calcium chloride crystals from the crystallization solution to so produce a mother liquor;

increasing the pH in the mother liquor and adding a calcium compound to thereby form additional calcium chloride crystals and a depleted solution, wherein the pH and a quantity of the calcium compound is effective to reduce the fluoride concentration in the depleted solution;

removing the additional calcium chloride crystals and remaining calcium compound from the depleted solution to thereby regenerate the aqueous solution of calcium chloride.

15. (new) The method of claim 14 wherein the pH is adjusted such that solubility of calcium fluoride is at least 0.2%.

16. (new) The method of claim 14 wherein the pH is adjusted such that solubility of calcium fluoride is at least 0.4%.

17. (new) The method of claim 14 wherein the effluent has a fluoride concentration of at least 0.1%.

18. (new) The method of claim 14 wherein the effluent has a fluoride concentration of at least 0.5%.

19. (new) The method of claim 14 wherein the pH of the crystallization solution is adjusted to or maintained at pH2 or lower.

20. (new) The method of claim 14 wherein the fluoride concentration in the depleted solution is reduced to no lower than 10 ppm.

21. (new) The method of claim 14 wherein the calcium chloride crystals in the crystallization solution have an average particle size of at least 30 μm.

22. (new) The method of claim 14 wherein the step of allowing calcium chloride crystals to form in the crystallization solution is performed at a temperature of between 30-90 °C.

23. (new) The method of claim 14 further comprising a step of washing and drying the calcium chloride crystals, and wherein the calcium chloride crystals after washing and drying have a purity of at least 99%, have loss on ignition of less than 0.3%, and a chlorine content of less 0.05%.

24. (new) The method of claim 14 wherein the mother liquor has a residual calcium fluoride content of at least 0.05%.

25. (new) The method of claim 14 wherein the mother liquor has a residual calcium fluoride content of between 0.05 and 2%.